

S-TIH18

Code(d) **72292**

Code(e) **72790**

Refractive Index n_d	1.72151 1.721507	Abbe Number v_d	29.2 29.23	Dispersion n_F-n_C	0.02468 0.024683
Refractive Index n_e	1.727331	Abbe Number v_e	29.00	Dispersion n_F-n_C'	0.025081

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.67384
n_{1970}	1.97009	1.68002
n_{1530}	1.52958	1.68715
n_{1129}	1.12864	1.69453
n_t	1.01398	1.69734
n_s	0.85211	1.70272
$n_{A'}$	0.76819	1.70668
n_r	0.70652	1.71047
n_C	0.65627	1.71437
$n_{C'}$	0.64385	1.71548
$n_{\text{He-Ne}}$	0.6328	1.71653
n_D	0.58929	1.72129
n_d	0.58756	1.72151
n_e	0.54607	1.72733
n_F	0.48613	1.73905
$n_{F'}$	0.47999	1.74057
$n_{\text{He-Cd}}$	0.44157	1.75195
n_g	0.435835	1.75399
n_h	0.404656	1.76735
n_i	0.365015	

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0061
$\Delta\theta_{C,A'}$	0.0001
$\Delta\theta_{g,d}$	0.0122
$\Delta\theta_{g,F}$	0.0111
$\Delta\theta_{i,g}$	

Constants of Dispersion Formula	
A_1	1.59921608E+00
A_2	2.59532164E-01
A_3	2.12454543E+00
B_1	1.16469304E-02
B_2	5.84824883E-02
B_3	1.86927779E+02

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.07
Remarks	

Partial Dispersions	
n_C-n_t	0.017028
$n_C-n_{A'}$	0.007687
n_d-n_C	0.007136
n_e-n_C	0.012960
n_g-n_d	0.032488
n_g-n_F	0.014941
n_h-n_g	0.013358
n_i-n_g	
n_C-n_t	0.018141
$n_e-n_{C'}$	0.011847
$n_{F'-n_e}$	0.013234
$n_i-n_{F'}$	

Thermal Properties	
Strain Point StP (°C)	570
Annealing Point AP (°C)	596
Transformation Temperature Tg (°C)	616
Yield Point At (°C)	644
Softening Point SP (°C)	703
Expansion Coefficients (-30~+70°C)	83
α ($10^{-7}/^\circ\text{C}$) (+100~+300°C)	98
Thermal Conductivity k (W/m·K)	1.029

Mechanical Properties	
Young's Modulus E (10^8N/m^2)	891
Rigidity Modulus G (10^8N/m^2)	357
Poisson's Ratio σ	0.248
Knoop Hardness Hk[Class]	560 6
Abrasion Aa	154
Photoelastic Constant β (nm/cm/ 10^5Pa)	2.87

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	1 ~ 2
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	1.0

Relative Partial Dispersions	
$\theta_{C,t}$	0.6899
$\theta_{C,A'}$	0.3114
$\theta_{d,C}$	0.2891
$\theta_{e,C}$	0.5251
$\theta_{g,d}$	1.3162
$\theta_{g,F}$	0.6053
$\theta_{h,g}$	0.5412
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7233
$\theta'_{e,C'}$	0.4723
$\theta'_{F',e}$	0.5277
$\theta'_{i,F}$	

Coloring			
λ_{80}	41	λ_5	36
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	
310	
320	
330	
340	
350	
360	
370	0.18
380	0.54
390	0.77
400	0.87
420	0.951
440	0.971
460	0.979
480	0.984
500	0.988
550	0.995
600	0.995
650	0.993
700	0.995
800	0.998
900	0.999
1000	0.999
1200	0.999
1400	0.996
1600	0.995
1800	0.986
2000	0.978
2200	0.948
2400	0.928

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	dn/dt relative ($10^{-6}/^\circ\text{C}$)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	1.1	1.8	1.8	2.2	2.5	3.5	4.7
-20~0	1.2	1.9	2.0	2.3	2.7	3.8	5.0
0~20	1.3	2.0	2.2	2.5	2.9	4.0	5.3
20~40	1.4	2.2	2.3	2.7	3.1	4.3	5.7
40~60	1.5	2.3	2.5	2.8	3.3	4.5	6.0
60~80	1.6	2.4	2.6	3.0	3.5	4.8	6.3